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Western Electric Co., Incorporated,  
Equipment Engineering Branch, Hawthorne.

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#### METHOD OF OPERATION

Panel Machine Switching System - Permanent Signal Trunk Group - Overflow Meter Circuit.

#### DEVELOPMENT

##### 1. PURPOSE OF CIRCUIT

This circuit is used to give a signal at the trouble desk as an indication that a subscriber's line having a permanent signal has become connected to the overflow terminal of a permanent signal trunk group at one of the district frames. This circuit is common to the overflow terminals of the permanent signal trunk groups of all district frames.

##### 2. WORKING LIMITS

Since the operation of this circuit is controlled by the district selector, no working limits are specified.

#### OPERATION

##### 3. PRINCIPAL FUNCTIONS

- 3.1 To give an audible and visual signal at the trouble desk when a district selector goes to the overflow terminals of a permanent signal trunk group of a district frame.
- 3.2 To record the number of times a district selector goes to the overflow terminal of a permanent signal trunk group by means of a message register.
- 3.3 To silence the audible and extinguish the visual signal and to restore the circuit to normal by means of a key located at the sender monitor position.

##### 4. CONNECTING CIRCUITS

- 4.1 Any standard district selector circuit having its Z commutator connected to the FT lead at overflow.
- 4.2 Any standard office selector circuit.
- 4.3 Any standard auxiliary signal circuit at the trouble desk.

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DESCRIPTION OF OPERATION

5. When a receiver is off the switchhook at a subscriber's station for a certain length of time, or a repair man's test set is across the line, and the plug of the sender monitor's cord circuit having been momentarily inserted in the make busy jack of the sender, the line is connected to a permanent signal trunk group at the district frame. When all the permanent signal trunks of a group are busy, the selector goes to the overflow terminals.
6. When a district selector connects to the overflow terminals of a permanent signal trunk group, and advances, a circuit is closed from ground momentarily connected to lead T, through the winding of the (L) relay to battery through the 355 ohm inner and 600 ohm outer windings of the 5-P message register in parallel operating the (L) relay which is faster in operating than the 5-P register. The (L) relay operated locks to ground on its armature, and closes a circuit from ground through the 1.7 ohm winding of the (OF) relay, break contact of the (NL) key, 2-G lamp, to battery through the winding of a relay in the associated auxiliary signal circuit, operating the (OF) relay and lighting the lamp. The (OF) relay operated, locks to ground on its armature under control of the (NL) key. The (L) relay operated, also connects ground to replace that connected over the T lead, which is removed when the district selector advances.
7. The operation of the 5-P messenger register, which occurs soon after the operation of the (L) relay short-circuits the winding of the (L) relay, which releases. The (L) relay released, releases the 5-P message register, ground having been removed from the T lead by the functioning of the district selector.
8. When the non-locking key associated with the lighted lamp at the sender monitor position is operated, the lamp is extinguished and the (OF) relay is released, restoring the circuit to normal.

ENGR: I.H.P.  
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BMS

CHK'D. BY: G.E.H.

APP'D. BY: E. R. COOKE  
H.G.J.

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